

Characteristics of SARS-CoV-2 and its Ability to Cause Physical Loss or Damage

July 14, 2021

Michael A. Sulzinski, PhD

Exhibit B

1. Overview

The statements made below reflect my opinions in the matter of Abbey Hotel Acquisition, LLC, Setai Hotel Acquisition, LLC; Setai Resort & Residence Condominium Association, Inc, and Setai Valet Services, LLC versus National Surety Company. These opinions are based upon a reasonable degree of scientific certainty after my examination of the calculations as set forth in the report of Dr. Aleksandr Aravkin regarding the presence of SARS-CoV-2 in Miami-Dade County, Florida, including the city of Miami Beach; as well as documents that pertain to this specific case, and scientific manuscripts that establish the properties of SARS-CoV-2, the nature of the virus spread, and its infectiousness. The purpose of this report is to both trace the science and history of SARS-CoV-2 in Miami-Dade County and to apply these findings to likely contamination causing physical loss or damage at The Setai Hotel in Miami Beach, Florida. I have also been asked to comment from a scientific basis on the applicability of Communicable Disease Coverage and of Civil Authority coverage under the policy of insurance issued to the Plaintiff. Finally, this report will render an opinion, based upon a reasonable degree of professional certainty, as to the physical loss or damage at the Setai Hotel, resulting from SARS-CoV-2 contamination.

2. SARS-CoV-2 caused Physical Loss or Damage at the Setai Hotel in Miami Beach, including its restaurants and spas.

The presence of SARS-CoV-2 virus causes physical loss or damage to commercial space, especially hotels, and their associated spaces including restaurants and lounges offering food, drink, and entertainment. The mere presence of the virus serves as a serious infection risk to human health and human life, particularly in hotel spaces, including the Setai Hotel and the nearby hotels in areas proximal to the Setai Hotel. The virus is imperceptible to sound, taste, and smell. It is too small to be seen by eye, and indeed, even too small to be seen with a regular microscope. Like many other threats to human health and life (for example, formaldehyde, radioactivity, carbon monoxide), SARS-CoV-2 does not physically alter the surfaces on which it settles. Yet, the physical loss is real because the virus is an authentic threat to human life and health, most importantly when the virus is present in droplets and aerosols suspended in the air, which renders that property dangerous and substantially unusable.

Morawska and Milton¹ wrote about the risk for SARS-CoV-2 respiratory microdroplets released into the air by infected people. They wrote that the risk is particularly acute in indoor, enclosed environments, especially those that are crowded and have inadequate ventilation relative to the number of occupants.

During March 2020, SARS-CoV-2 virus contamination was present at the Setai Hotel., Due to the nature of unpredictable, unavoidable, and largely undetectable virus contamination, the actual spread pattern cannot be mapped out. The virus was in the air, as respiratory droplets and as aerosols, which eventually deposited to surfaces. The virus contamination was occult; not easily measurable as would be the case for a chemical spill, or a natural gas pipe leak, or a radiation exposure. Any contamination was also invisible and occult.

¹ <https://academic.oup.com/cid/article/71/9/2311/5867798>

As federal, state and county government officials proclaimed, the reasonable way to deal with this virus contamination was to accept that areas accessible to the public are already contaminated, and therefore, that they are unsafe, and substantially unusable, sources of infection. The contamination originates from persons (who are unknowingly or knowingly infected), who discharge and disperse the infectious virus through respiratory droplets and aerosols, on surfaces, or by direct physical contact.

As a result, the Setai Hotel became covertly contaminated with SARS-CoV-2 suspended in droplets and aerosols from infected employees, venders, vacationers, local visitors, and shoppers. Virus was dispersed in air as droplets and aerosols, then on bar and table surfaces in restaurant areas, registration desk and pens, countertops, cash registers, credit card devices, doorhandles, bags, shelves, washroom, and pool facilities, and even currency. Accordingly, transmission risks associated with room service, maintenance and housekeeping services, and service persons entering one room and then another are common. There are also transmission risks in elevators, in the lobby for persons checking in and out and using concierge services. While there are transmission risks associated with many types of viruses, the susceptibility of contagion and the adverse effects of transmitting COVID-19, is far greater than with other types of virus.

Furthermore, as guests, visitors and service workers were unlikely to be wearing masks in March 2020 (see *infra.*), the risk for respiratory droplet or aerosol transmission would have been higher than if masks were worn. That presence of SARS-CoV-2 virus causes physical loss or damage to commercial space, especially hotels, including their spas, restaurants, lounges, and bars where lodging, personal services, food, drink, and entertainment is provided to hotel guests and to visitors. Vourinen *et al*², (2021) presented a mathematical model of aerosolized spread in

² <https://www.sciencedirect.com/science/article/pii/S0925753520302630?via%3Dihub>

commercial environments; this model relates well to the spaces of the Setai Hotel, and further supports how substantially unusable and dangerous the facilities were from physical loss or damage caused by the virus.

Dining options at the Setai Hotel included Jaya and Ocean Grill Restaurants and the Bar and Courtyard³. Dining and bar services presented a risk for SARS-CoV-2 infection because of persons sharing common eating and drinking spaces in restaurants and lounges, with tables and chairs generally within close proximity. In March 2020 these persons likely included a mix of old and young guests (including those visiting for spring break) from the United States and internationally, each of them bringing with them a particular infection risk associated with their location of origin, and none of them likely to be wearing masks to mitigate their shedding of virus, if they were infected (see *infra*).

The Valmont for the Spa at the Setai is a full-service salon⁴ that offers facial treatments, body treatments, body rubs, manicures, pedicures, waxing, body polish, foot reflexology, as services for men as well as women. The physical loss or damage is particularly relevant to a skin care business, where aestheticians and clients typically share very small spaces designed for privacy and efficiency, and because of body contact, the necessity for persons to be very close to each other.

Morawska and Milton⁵ wrote how poor ventilation enhances the risk for SARS-CoV-2 respiratory microdroplets released into the air by infected people. They wrote that the risk is particularly acute in indoor, enclosed environments, especially those that are crowded and have inadequate ventilation relative to the number of occupants. Such was the case with multiple

³ <https://www.thesetaihotels.com/en-us/hotels/miami-beach/dining>

⁴ <https://www.thesetaihotels.com/en-us/hotels/miami-beach/spa>

⁵ <https://academic.oup.com/cid/article/71/9/2311/5867798> Accessed on May 3, 2021

aestheticians working on single clients in small, confined spaces at The Valmont for the Spa at the Setai. Thus, skin care services posed a particular contamination risk and infection because of the inherent nature of the close and direct physical contact between aestheticians and their clients. This unique risk for aestheticians and their clients is also evident in that the CDC specifically created *COVID-19 Employer Information for Beauty Salons and Barbershops*⁶. In the posting, the CDC noted areas of industry-specific concern for virus contamination in beauty salons: stylist chairs, shampoo sinks, massage tables, countertops, blow dryers and shears.

3. Miami-Dade County experienced a unique risk for COVID-19 Transmission

Miami-Dade County was at a distinct risk for contamination because of its unique place as a major tourist destination, attracting persons from across the United States and worldwide, most particularly in the months of March and April, when spring break vacationers typically inundate Miami-Dade County. In May 2019, the Greater Miami Convention & Visitors Bureau (GMCVB) announced⁷ a record-breaking 16.5 million overnight visitors in calendar year 2018, along with 6.8 million “Day Trippers” for a total visitor number of 23.3 million, including a substantial amount of international visitors. In addition to visitors, the U.S. Census Bureau estimated the 2017 population of Miami-Dade County at 2.6 million persons⁸. So, because of visitors (drawn from everywhere, to hotels, bars and restaurants, beaches, and entertainment) mingling with the 2.6 million people permanently living there, Miami-Dade County experienced special contamination and infection risks for visitors and residents alike.

⁶ <https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/beauty-salon-barber-employers.html> accessed on April 29, 2021

⁷ <https://www.miamiandbeaches.com/press-room/miami-press-releases/record-tourism-industry-performance-in-2018>

⁸ <https://www.census.gov/quickfacts/fact/table/miamidadecountyflorida,browardcountyflorida,palmbeachcountyflorida/POP060210>

For example, Governor Ron DeSantis, in Executive Order 20-91⁹ listed reasons that southern Florida's large urban centers were particularly at risk in March 2020 for SARS-CoV-2 contamination: the majority of residents in Florida who have tested positive for COVID-19 had been concentrated in its southeastern counties and other urban cores; positive cases of COVID-19 had continued to rise in other states in close proximity to Florida; many thousands of people fled the New York City region to Florida following New York State issuing their "shelter in place" order, as a result jeopardizing the health and safety of Floridians. Because of these COVID-19 threats, Governor DeSantis on March 23, 2020 issued Executive Order 20-80 requiring all individuals that flew into Florida from states with substantial community spread to self-isolate in Florida for 14 days. Then, on March 27, 2020 he issued Executive Order 20-86 requiring all individuals who drove into Florida from states with substantial community spread to self-isolate in Florida for 14 days, as persistent interstate travel, continued to pose a risk to the entire state of Florida.

Additionally, in March 2020 the state of Florida had to deal with an influx of spring break partiers from across the country, even in the face of warnings about the developing global pandemic. On March 18, 2020 CBS News reported: "Thousands of people in Florida are seemingly ignoring distancing guidelines during the coronavirus outbreak. Despite warnings from public health experts, photos and videos show beaches across the state packed with spring breakers." This suggests that young persons are generally more likely to be risk takers, and if asymptomatic or with mild symptoms, would be more likely to continue partying, and pose infection risks to others. For example, Brady Sluder, a spring break partier in Miami Beach from Ohio on March 19 on was quoted¹⁰: *"If I get corona, I get corona. At the end of the day, I'm not*

⁹ https://www.flgov.com/wp-content/uploads/orders/2020/EO_20-91-compressed.pdf

¹⁰ <https://miami.cbslocal.com/2020/03/25/coronavirus-miami-beach-spring-break-viral-comments-apology/>

going to let it stop me from partying. You know, I've been waiting, we've been waiting for Miami spring break for a while, about two months we've had this trip planned, two or three months, and we are just out here having a good time. And whatever happens, happens... "I'm not going to let it stop me from partying." Then on March 24, 2020, *The Wall Street Journal* reported¹¹: "The neighborhoods around Miami Beach were still thumping with activity for spring break early this week. Crowds packed the streets of South Beach, with bikini-clad women strutting along streets and revelers squeezing into SUVs blaring music. Mostly full hotels were doing some of the best business in the country."

When Miami officials announced that "Spring Break was cancelled", and that public beaches were closed¹², Jimmy Morales was quoted as writing to commissioners: "The idea is to force folks to make decisions to either go into the stores, restaurants or bars, or go back to their hotels to hang out." In other words, throngs of spring break visitors from out of town were purposely diverted from Miami beaches to Miami hotels, refocusing the SARS-CoV-2 contamination risk from outside (lower risk), inside to the hotels (higher risk).

4. Hotels are high risk areas for SARS-COV-2 contamination

Because of the nature of hotels, and the transience of their clients and visitors, hotels pose a particular threat for contamination, in all areas from the lobby to the front desk, to the confined spaces of elevators, to hallways, and into the guest rooms themselves, with transmission risks associated with room service, maintenance and housekeeping services, service persons entering one room and then another. There are transmission risks in elevators, in the lobby for persons

¹¹ <https://www.wsj.com/articles/the-last-place-to-be-hit-with-coronavirus-worries-florida-beaches-11584788400>

¹² <https://www.tampabay.com/news/health/2020/03/15/beaches-in-south-beach-in-miami-closed-as-spring-break-declared-over/>

checking in and out and using concierge services. Then, that presence of SARS-CoV-2 virus causes physical loss or damage to commercial space, especially hotels, including their spas, restaurants, lounges, and bars where lodging, personal services, food, drink, and entertainment is provided to hotel guests and to visitors. The presence of SARS-CoV-2 is a serious infection risk to human health and human life, particularly in hotel spaces, such as the Setai Hotel. Visitors originate from both international and domestic locations, a certain number of them experiencing asymptomatic or pre-symptomatic infection, and carrying with them the risk of SARS-CoV-2.

Thus, in March 2020, persons from all over the world visited the Setai Hotel, and spilled out into the streets and neighborhoods nearby for food and shopping, all the time interacting with others who may have been unknowingly infected, shedding virus in the form of respiratory droplets and aerosols that came to settle to surfaces. That this was an authentic, real-world risk for hotels, and was confirmed by a contact tracing study done by the South Nevada Health District. Their contact tracing study showed, not surprisingly, that the highest risk for contamination came from hotels, from persons who were unknowingly infected prior to them testing positive for SARS-CoV-2¹³.

Leclerc *et al.*, (2020) cited documented cases of hotel transmission of SARS-CoV-2 very early in the pandemic.¹⁴ Jiang *et al.*, (2020)¹⁵ reported SARS-CoV-2 environmental contamination in two rooms of a hotel after pre-symptomatic persons who stayed there were later laboratory confirmed as infected. They detected SARS-CoV-2 viral RNA on a third of the surfaces they tested, including hotel pillowcases, sheets, and duvet covers.

¹³ <https://ewscripps.brightspottedn.com/44/ec/fb947c0e47919413cee2cbb6b5fa/clarkcountyexposurelist.pdf>

¹⁴ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7327724/>

¹⁵ https://wwwnc.cdc.gov/eid/article/26/9/20-1435_article

Significantly, during March 2020, any infected persons shedding virus were even more a threat because the use of facemasks in hotels and other spaces was actually being *discouraged* by health officials worldwide (as described below), and they would be more likely to shed virus in respiratory droplets and aerosols without facemasks.

5. Arrival of SARS-CoV-2 in Florida and Miami-Dade County:

A timeline of COVID-19 milestones for March 2020, Florida and Miami-Dade County¹⁶:

March 1: First two Floridians tested positive for SARS-CoV-2. 50% 25% 0%

March 9: Governor DeSantis declared a state of emergency.

March 11: First laboratory confirmed case of COVID-19 reported in Miami-Dade County.¹⁷

March 17: Governor DeSantis ordered all bars and nightclubs shut down state-wide.

March 19: Miami-Dade County reached 101 confirmed cases; Miami-Dade County then led the state in the number of confirmed cases of COVID-19.¹⁸ (By the morning of March 24, the number already climbed to 338 confirmed cases in Miami-Dade¹⁹)

March 26: Miami-Dade Emergency Order 09-20 directed that hotels shall not accept any occupants regardless of when reservations were made, or extend existing reservations; and that all restaurants, bars, taverns, pubs, night clubs, banquet halls, cocktail lounges, cabarets, breweries, cafeterias, and any other alcohol and/or food service business establishment with seating for more than eight people within the incorporated and unincorporated areas of Miami-Dade County shall close on-premise service of customers. This order effectively shut down restaurants and hotels in

¹⁶ <https://www.clickorlando.com/news/local/2020/03/20/timeline-the-spread-of-coronavirus-in-florida/>

¹⁷ <http://www.floridahealth.gov/newsroom/2020/03/031120-florida-department-of-health-announces-new-positive-covid19-cases-florida.pr.html>

¹⁸ <https://www.miamiherald.com/news/coronavirus/article241330966.html>

¹⁹ <http://new.miamisprings.com/coronavirus-update-278-cases-in-miami-dade-county/>

Miami-Dade County because of the physical loss and damage caused by SARS-CoV-2 contamination.

6. Documented Miami-Dade Case Statistics Did Not Include Pre-Symptomatic and Asymptomatic Infections, or Infected Persons not Tested

The information referenced *supra*, citing *documented* cases of COVID-19, vastly underestimates the prevalence of the disease and the virus in Miami-Dade County in March 2020. To illustrate this point, Moghadas *et al.*²⁰, (2020) reported that it is important to consider pre-symptomatic and asymptomatic infected individuals who are both important reservoirs of infection. These people can shed²¹ virus into the air as droplets and aerosols, and onto surfaces. Although these people are not themselves sick, they can “silently transmit” the virus to others. They reported that the majority of persons who are infectious are silent transmitters, responsible for more than 50% of the overall attack rate in the COVID-19 outbreaks.

In fact, epidemiological statistics of positive test results, which are considered for calculation of the Case Fatality Rate (CFR), do not include persons who are infectious but not confirmed by a laboratory test. These groups include:

- a. People who had respiratory symptoms and fever, but because of low risk for serious infection (young age, lack of comorbidities) were advised to stay at home and not seek either testing or treatment;

²⁰ <https://www.pnas.org/content/117/30/17513>

²¹ [https://gov.nv.gov/News/Emergency_Orders/2020/2020-03-31_-_COVID-19_Declaration_of_Emergency_Directive_010_-_Stay_at_Home_Order_\(Attachments\)/](https://gov.nv.gov/News/Emergency_Orders/2020/2020-03-31_-_COVID-19_Declaration_of_Emergency_Directive_010_-_Stay_at_Home_Order_(Attachments)/)

- b. People who had respiratory symptoms and fever, who could not access a testing center (e.g., homeless, elderly, people who live alone with no transportation);
- c. People who had respiratory symptoms, who chose to not get tested;
- d. People who had mild respiratory symptoms and no fever, who do not realize they may be infected with SARS-CoV-2; and
- e. People who were infected but had no symptoms at all. These persons were infected but unaware (“subclinical infection”), likely contagious, and reservoirs of infection to others.

It should also be pointed out how limited testing in March 2020 underestimated how quickly the virus was already moving in the population in Miami Dade County. Jessica Cohen²² wrote (March 30, 2020) about how “Limited testing poses challenges to mapping COVID-19 spread.” Testing shortages plagued the CDC, from issues with assay validation for labs, critical reagent supply shortages, shortages of the test kits themselves, lack of instrument access, as well as increased staffing needs. To illustrate, during the month of February 2020, as the virus began taking root in the U.S. population, CDC data show government labs processed only 352 COVID-19 tests, an average of only a dozen per day.²³

In Florida, Orange County (the fifth-most populous county with 1.3 million residents, and home to arguably the most popular theme park destinations in the world in Disney World and Universal Orlando), had performed only 38 COVID-19 tests by March 10, 2020 and only tested people deemed at risk of infection.²⁴ The same article reported that Governor DeSantis was

²² <https://www.modernhealthcare.com/operations/limited-testing-poses-challenges-mapping-covid-19-spread>

²³ <https://www.syracuse.com/coronavirus/2020/03/coronavirus-testing-blunders-crippled-us-response-as-covid-19-spread.html>

²⁴ <https://www.orlandosentinel.com/coronavirus/os-ne-health-coronavirus-new-testing-numbers-20200317-uj63jevcengc5e5rk6banipf6u-story.html>

advising persons without symptoms to not get tested, to save limited testing resources for high-risk individuals.

Consistent with the model that early prevalence rates were underestimated, Kalish *et al.*²⁵, (2021) published a study based on seropositivity in over 9000 adults in the United States who been infected with SARS-CoV-2, but not diagnosed with COVID-19. They confirmed that early in the pandemic, asymptomatic SARS-CoV-2 infection and delayed implementation of diagnostics led to vastly underestimated prevalence rates in the United States and elsewhere. In fact, their study concluded that by mid-July 2020 in the United States, there were an estimated 16.8 million infections that were undiagnosed and therefore were not included in prevalence statistics.

Likewise, Althoff *et al.*,²⁶ (2021) reported that based on their detection of SARS-CoV-2 specific antibodies, SARS-CoV-2 was established in the United States weeks prior to the first recognized cases of COVID-19. Thus, the confirmed COVID-19 cases in Miami-Dade County on March 20 cannot possibly accurately reflect the widespread presence of the virus, including in the Setai Hotel. Therefore, by March 20, 2020, the 101 total confirmed cases reported²⁷ for Miami-Dade County, does not reflect the fact that the SARS-CoV-2 virus was already firmly established in Miami-Dade County, including most certainly the Setai Hotel.

7. By March 2020, the virus was already firmly established to be a real-world global threat with outbreaks documented at a shopping mall, a restaurant and cruise ships.

²⁵ <https://stm.sciencemag.org/content/scitransmed/early/2021/06/21/scitranslmed.abh3826.full.pdf>

²⁶ <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciab519/6294073>

²⁷ <https://media.southernnevadahealthdistrict.org/download/COVID-19/updates/20200320-Daily-Aggregate-COVID19.pdf>

Cai *et al.*²⁸ monitored and traced close contacts and hypothesized possible transmission modes in a cluster of COVID-19 cases linked to a contaminated shopping mall in Wenzhou, China. They reported that the likely index patient (“Patient A”) was likely an asymptomatic source of SARS-CoV-2 virus, and that their findings appeared to indicate that low intensity transmission occurred without prolonged close contact in this mall; that is, the virus spread by indirect transmission.

Himiki *et al.*²⁹ documented that an outbreak of COVID-19 among passengers and crew on a cruise ship led to quarantine of approximately 3,700 passengers and crew that began on February 3, and lasted for nearly 4 weeks at the Port of Yokohama, Japan. By the end of quarantine, approximately 700 cases of COVID-19 had been laboratory-confirmed among passengers and crew.

Finally, real-world experience has described how SARS-CoV-2 can be spread via both droplets and aerosols. Lu *et al.*,³⁰ documented an outbreak of COVID-19 in persons who were at a restaurant in Guangzhou (China), during a period from January 26, 2020 to February 10, 2020. The outbreak affected ten people from three families who ate at the same air-conditioned restaurant. From their examination of the potential routes of transmission, they concluded that the most likely cause of this outbreak was droplet transmission; yet virus transmission in this outbreak could not be explained by standard droplet transmission alone. They hypothesized that strong airflow from the air conditioner could have distributed droplets for distances greater than one meter from one table to another. Thus, this study not only demonstrated “real world transmission,” it

²⁸ https://wwwnc.cdc.gov/eid/article/26/6/20-0412_article Originally published on March 12, 2020.

²⁹ <https://www.cdc.gov/mmwr/volumes/69/wr/mm6911e2.htm>

³⁰ https://wwwnc.cdc.gov/eid/article/26/7/20-0764_article

also supports person to person transmission by airflow, as well as the risk of infection in restaurant environments such as those in the Setai Hotel.

8. Statistical Likelihood of Infectious Persons at the Setai Hotel

Plaintiff's Expert Aleksandr Aravkin, Ph.D. calculated³¹ a Prevalence of Infectious Cases Estimation for Miami-Dade County, Florida and established the likely presence of SARS-CoV-2 at the Setai Hotel during February and March 2020 by applying a methodology that comprised three steps:

- a. Estimation of the number of infectious cases corresponding to recorded deaths attributable to COVID-19, using a statistic called Infection Fatality Rate (IFR);
- b. Distribute the cases over an approximate time horizon, using current best estimates of the duration between infections and deaths; and
- c. Compute the total estimated infectious cases by day and location, using the best estimates of duration of infectivity.

Based on his calculations, Dr. Aravkin establishes the statistical likelihood that SARS-CoV-2 contaminated the Setai Hotel on March 26, 2020, when the hotel, spa, and restaurants were closed because of COVID-19. His calculations reflect a level of accuracy that does not directly rely on positive test results, because doing so suffers from inherent flaws of underestimation of the prevalence of infectious cases in a population, as noted *supra*. Applying his calculations, Dr. Aravkin concludes that in Miami-Dade County on March 26, 2020, it is likely that 2.9 persons out of every 1000 persons (with a plausible range of 2.3 to 3.8 out of 1000 persons) were infectious and shedding SARS-CoV-2 at and onto the Setai Hotel.

³¹ In his expert report and which, to my understanding, is also being submitted in support of the Plaintiffs.

9. It is likely that any infectious persons at the Setai Hotel were shedding SARS-CoV-2, at a time when the use of masks was being discouraged for the general public.

In March 2020, when considering those infectious persons shedding SARS-CoV-2 on the premises of the Setai Hotel, it is important to appreciate that in that time period, mask wearing was neither a common nor a recommended practice. In fact, in an article that was published online on March, 20, 2020, Feng *et al.*,³² reported that “the U.S. Surgeon General advised against buying masks for use by healthy people. One important reason to discourage widespread use of face masks is to preserve limited supplies for professional use in health-care settings. Universal face mask use in the community has also been discouraged with the argument that face masks provide no effective protection against coronavirus infection.” In the same article, Feng *et al.*, listed the following contemporaneous recommendations: (a) from the World Health Organization (WHO): “If you are healthy, you only need to wear a mask if you are taking care of a person with suspected SARS-CoV-2 infection;” (b) from the United States: “Centers for Disease Control and Prevention does not recommend that people who are well wear a face mask (including respirators) to protect themselves from respiratory diseases, including COVID-19,” and “(The) US Surgeon General urged people on Twitter to stop buying face masks;” (c) from the United Kingdom: “Face masks play a very important role in places such as hospitals, but there is very little evidence of widespread benefit for members of the public;” and (d) from Germany: “There is not enough evidence to prove that wearing a surgical mask significantly reduces a healthy person’s risk of becoming infected while wearing it. According to WHO, wearing a mask in situations where it is not

³² <https://www.thelancet.com/action/showPdf?pii=S2213-2600%2820%2930134-X>

recommended to do so can create a false sense of security because it might lead to neglecting fundamental hygiene measures, such as proper hand hygiene.”

To summarize, those likely infected persons at the Setai Hotel were spreading virus as droplets and aerosols without the mitigation benefits offered by wearing a facemask; and as such, they were all the more likely to be shedding SARS-CoV-2 in the air, virus contamination with droplets and aerosols, which settled to the surfaces of the Setai Hotel.

10. Infectiousness of Coronaviruses.

Coronaviruses (including SARS-CoV-2) are viruses that display some unusual characteristics that make them formidable disease agents. The infectious virus (“virion”) includes an external envelope composed of viral structural proteins embedded in a lipid bilayer derived from the host cell. Not all viruses have an envelope, and enveloped viruses are primarily transmitted by close intimate contact, as in the direct exchange of body fluids. For viruses that do contain an envelope, that envelope is required for infectivity, and if the envelope is damaged, destroyed or lost; the virus loses its infectivity. Thus, most enveloped viruses rapidly lose infectivity when released from the human body, because the envelope is a labile (fragile) physical structure. When the envelope structure is compromised, the virus is no longer infectious because the virus cannot attach to receptors on cells. An intact envelope is a requirement for infectivity. Therefore, enveloped viruses are primarily transmitted by close intimate contact, as in the direct exchange of body fluids.

There have been a number of reports on virus infectivity by fomite contamination (see below), and different groups have reported varying results. In a recent (April 2021) posting on its

public information page, the CDC reports³³ that “*People can be infected with SARS-CoV-2 through contact with surfaces. However, based on available epidemiological data and studies of environmental transmission factors, surface transmission is not the main route by which SARS-CoV-2 spreads, and the risk is considered to be low. The principal mode by which people are infected with SARS-CoV-2 is through exposure to respiratory droplets containing infectious virus.*”

Thus, although SARS-CoV-2 is an enveloped virus, it is reported to retain infectivity for extended periods outside the body, as aerosols or droplets, or on surfaces as fomites.³⁴ Riddell *et al.*, (2020) reported on the *in vitro* persistence of SARS-CoV-2 on common surfaces and determined survival rates of the virus under different conditions. They reported half-lives of between 1.7 and 2.7 days at 20°C, reducing to a few hours when temperature was elevated to 40°C. With initial viral loads broadly equivalent to the highest titers excreted by infectious patients, they isolated viable virus for up to 28 days at 20°C from common surfaces such as glass, stainless steel, and both paper and polymer banknotes. Conversely, infectious virus survived less than 24 h at 40°C on some surfaces. They concluded that SARS-CoV-2 could remain infectious for significantly longer time periods than generally considered possible.

Similarly, Van Doremalen *et al.*,³⁵ (2020) reported that aerosol and fomite transmission of SARS-CoV-2 is plausible since the virus can remain viable and infectious³⁶ in aerosols for hours,

³³Science Brief: SARS-CoV-2 and Surface (Fomite) Transmission for Indoor Community Environments, <https://www.cdc.gov/coronavirus/2019-ncov/more/science-and-research/surface-transmission.htm> updated April 5, 2021

³⁴ A fomite is an object (such as a dish, doorknob, or article of clothing) that may be contaminated with infectious agents (such as bacteria or viruses) and serve in their transmission. REF: <https://www.merriam-webster.com/dictionary/fomite>

³⁵ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7121658/>

³⁶ An infectious aerosol is a collection of pathogen-laden particles in air. Aerosol particles may deposit onto or be inhaled by a susceptible person. Aerosol transmission is biologically plausible when infectious aerosols are generated by or from an infectious person, the pathogen remains viable in the environment for some period of time, and the target tissues in which the pathogen initiates infection are accessible to the aerosol. Reference: https://journals.lww.com/joem/Fulltext/2015/05000/Aerosol_Transmission_of_Infectious_Disease.4.aspx?casa_toke

and on surfaces for up to days (depending on the inoculum shed). Their findings echoed those with SARS-CoV-1, in which these forms of transmission were associated with nosocomial spread and super-spreading events. Moriarty *et al.*,³⁷ (2020) reported that SARS-CoV-2 RNA was identified on a variety of surfaces in cabins of both symptomatic and asymptomatic infected passengers up to 17 days after cabins were vacated on the cruise ship *Diamond Princess*, but before disinfection procedures had been conducted. (During the initial stages of the pandemic, the *Diamond Princess* was the setting of the largest COVID-19 outbreak outside mainland China.) Cai *et al.*,³⁸ reported that SARS-CoV-2 is presumed to spread primarily via respiratory droplets and close contact; but that these transmission modes do not explain all cases. They described a cluster of COVID-19 cases associated with a shopping mall in China, where they monitored and traced close contacts, and hypothesized possible transmission modes. They concluded that the rapid spread of SARS-CoV-2 in their study could have resulted from spread via fomites (e.g., elevator buttons or restroom taps) or virus aerosolization in a confined public space (e.g., restrooms or elevators).

11. Communicable Disease Coverage

I have been asked to comment from a scientific basis on the applicability of Communicable Disease coverage under the policy of insurance issued to the Plaintiff. It is my understanding that the Policy has defined “communicable disease” as *any disease, bacteria, or virus that may be*

[n=JH_aSixH5I0AAAAA:mGHSCQdLxG3noNMW_al-QRMsAe_SQtKo7dk2YVYBW7iMKgCApkcSA8oMPdF76qP6FrXKi-EMCSRE8gQyYIVZKTIX2BuPDg](#)

³⁷ Moriarty, L.F., *et al.*, 2020. Morbidity and Mortality Weekly Report, US Dept. of Health and Human Services/Centers for Disease Control and Prevention. Early Release on March 23, 2020 on the MMWR <https://www.cdc.gov/mmwr/volumes/69/wr/mm6912e3.htm>

³⁸ Cai, *et al.*, 2020. CDC, Emerging Infectious Diseases accessed at https://wwwnc.cdc.gov/eid/article/26/6/20-0412_article on April 11, 2021

transmitted directly or indirectly from human or animal to a human. In that SARS-CoV-2 is a virus that causes COVID-19 disease, and that it is transmitted directly (and possibly indirectly, by fomites) from human to a human, it is my opinion that there is scientific basis to describe SARS-CoV-2 and COVID-19 at the Setai Hotel as a communicable disease.

It is also my understanding that the Policy has defined “Communicable disease event” as *an event in which a public health authority has ordered that a location be evacuated, decontaminated, or disinfected due to the outbreak of a communicable disease at such location.* In Miami-Dade Emergency Order 09-20, the County Mayor of Miami-Dade County directed the evacuation of hotels by this order: *Commencing March 26, 2020, hotels, motels, short-term vacation rentals, and other commercial lodging establishments shall not (i) accept any occupants, regardless of when reservations were made, or (ii) extend reservations for persons other than Essential Lodgers.* The order cited the March 1 State of Florida Executive Order Number 20-51, in which the State Health Officer and Surgeon declared a Public Health Emergency due to the discovery of COVID-19/novel Coronavirus in Florida.

It is therefore my opinion that there is scientific basis to conclude that Plaintiff has experienced a “communicable disease event.”

12. Civil Authority Coverage

I have been asked to comment from a scientific basis on the applicability of Civil Authority coverage under the policy of insurance issued to the Plaintiff. It is my understanding that there is a claim that beginning on or about March 20, 2020 Plaintiff’s businesses were interrupted by various civil authority orders. Insofar as the Policy states that prohibition of access by a civil authority must arise from direct physical loss or damage to property other than at such location,

and be caused by or result from a covered cause of loss, and occur within the number of miles stated in the Declarations from such location, I offer the following scientific observations regarding physical loss or damage.

For the reasons listed *supra.*, the Setai Hotel was contaminated with SARS-CoV-2, and the physical loss or damage made the premises unsafe and effectively unusable. SARS-CoV-2 similarly contaminated public places including nearby hotels and restaurants. In fact, the virus was most certainly present and therefore causing physical loss or damage within 30 other hotels that are located within one mile of the Setai Hotel (according to TripAdvisor.com³⁹): Lennox Miami Beach, Shelborne South Beach, Riviera Suites South Beach, Nautilus by Arlo, Redbury South Beach, Gale South Beach (Curio Collectio by Hilton), Pestana South Beach, The Plymouth South Beach, SLS South Beach, Hotel Belleza, Marseille Hotel, Catalina Hotel and Beach Club, Kimpton Surfcomber Hotel, South Beach Hotel, National Hotel, The Gates Hotel South Beach Doubletree, Boulon South Beach, Hampton Inn Miami South Beach, Berkeley Park MGallery Hotel Collection, The Sagamore Hotel South Beach, Townhouse Hotel, San Juan Hotel, KAYAK Miami Beach, Cadet Hotel, Crest Hotel Suites, James Hotel, Greenview Hotel, 1 Hotel South Beach, W South Beach, and the Ritz-Carlton South Beach.

For each of those thirty hotels within one mile of the Setai Hotel, one could apply Dr. Aravkin's calculation that it is likely that 2.9 persons out of every 1000 persons (with a plausible range of 2.3 to 3.8 out of 1000 persons) were infectious and shedding SARS-CoV-2, establishing physical loss or damage at an extraordinary number of other properties within one mile of the Setai Hotel. In fact, because of the dense concentration of hotels and visitor attractions within one

³⁹https://www.tripadvisor.com/HotelsNear-g34439-d503070-The_Setai_Miami_Beach-Miami_Beach_Florida.html

mile, there are few other places in the United States that suffered the extent of COVID-19 physical loss or damage within a one-mile radius.

13. Summary

SARS-CoV-2 is unlike any other disease agent encountered in over 100 years, since Spanish influenza in 1918. Miami-Dade County and the city of Miami, because of the draw to visitors worldwide, including persons visiting for spring break, was at particular risk for catastrophic losses from the presence of this virus contaminating hotel spaces. In March 2020, there was an underestimate of the number of infections because of a broken testing system to detect infected persons. Moreover, public health officials globally advised against the use of facemasks for the general public. The presence of the virus was an even more significant source of physical loss or damage because, at the time, there were no effective means of treatment, and no vaccine to mitigate the damaging effects of the presence of the virus.

If there ever was an infectious agent that caused physical loss and damage, it is SARS-CoV-2, in the hotels of Miami-Dade County. This physical loss or damage was not limited to the Setai Hotel. Within one mile of the Setai Hotel, at 30 other hotel premises, there was physical loss or damage caused by contamination by SARS-CoV-2.

14. Expert Opinion

I examined documents that pertain to this specific case (including Dr. Aravkin's report); Florida State Government Declarations; contemporaneous news reports, and scientific manuscripts that establish the properties of SARS-CoV-2; including its infectiousness as a contaminant in respiratory droplets and aerosols, and on surfaces; and the presence and spread of the virus during

March, 2020, when testing was limited, and facemasks were not recommended. I have drawn conclusions based on those examinations.

It is my expert opinion that the approximately 2.9 of every 1000 persons who visited the Setai Hotel in March 2020 were infectious and shedding SARS-CoV-2 to the air as respiratory droplets and aerosols, and furthermore, that those infectious persons were unlikely to be wearing facemasks. That presence of SARS-CoV-2 contamination caused physical loss or damage at the Setai Hotel by rendering the spaces unsafe and substantially unusable.

It is likewise my expert opinion that there is a scientific basis to describe SARS-CoV-2 and COVID-19 at the Setai Hotel as a “communicable disease,” and there is a scientific basis to conclude that Plaintiff has experienced a “communicable disease event.”

It is my expert opinion that SARS-CoV-2 caused physical loss or damage not only at the Setai Hotel, but also physical loss or damage at some thirty properties within one mile from the Setai Hotel, and the presence of SARS-CoV-2 rendered those other properties unsafe and substantially unusable.

All my opinions are held to a reasonable degree of scientific certainty.